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M. L. FERNALD (*Rhodora* 9:140-146. 1907), in a presentation of the genus *Suaeda* in northeastern America, recognizes 4 species and describes one as new (*S. Richii*).—G. F. ATKINSON and C. W. EDGERTON (*Jour. Mycol.* 13:185, 186. 1907; also *Science N. S.* 26:385, 386. 1907) have published a new genus (*Pro-tocoronospora*) of fungi discovered infecting the cultivated vetch, and have published it in two journals without any evidence as to which publication is to be regarded as the original one.—C. H. PECK (*Bull. Torr. Bot. Club* 34:345-349. 1907) has described 12 new species of fleshy fungi, distributed among 8 genera.—E. HASSLER (*Bull. Herb. Boiss. II.* 7:718-740. 1907), in continuation of his *Plantae Paraguariensis*, publishes a new genus (*Paradolichandra*) of Bignoniaceae.—L. RADLKOFER (*Leaflets Philippine Bot.* 1:208-211. 1907) has published 4 new species of Sapindaceae from the Philippines.—J. M. C.

**Movement of water.**—DIXON adduces experimental evidence<sup>10</sup> that EWART's estimates<sup>11</sup> of the velocity of the transpiration stream and the resistances it encounters are vastly too great. EWART calculated from his data that it would require a head of water 6-33 times the height of the tree to drive a sufficient amount of water against the resistance encountered. According to DIXON's data, with liberal allowances for transpiration, it would suffice to have a head equal to the height of the tree. As to the soundness of the cohesion theory of the ascent of water, against which EWART had brought his conclusions as objections, DIXON says: "Apart from the weighty evidence which has elsewhere been adduced in its favor, the fact that other theories, both old and new, have to assume properties for the waterways of plants which are either in the highest degree improbable . . . or are even directly negated by experiment, seems to support the theory by a process of exclusion."—C. R. B.

**Light perception.**—Another adverse report on HABERLANDT's theory of the lens-function of the epidermal cells in the perception of light is rendered by NORDHAUSEN.<sup>12</sup> Unlike HABERLANDT, who obliterated the lens action by a film of water, and KNIEP who reversed it by paraffin oil, NORDHAUSEN used a film of 5-10 per cent. gelatin, whose refractive index is almost that of cell contents. (By making the gelatin opaque with lamp black he used it also to exclude light from the petiole, for which it is much superior to leather or paper.) He found that the clear gelatin did actually eliminate the lens action of the convex cells, and testing the ability of the leaf to respond to light in the very plants used

<sup>10</sup> DIXON, H. H., On the transpiration current in plants. *Proc. Roy. Soc. London B.* 79:41-57. 1907.

<sup>11</sup> EWART, A. E., Ascent of water in trees. *Phil. Trans. Roy. Soc. London B.* 198:41-85. 1905. Also, The resistance to flow in wood vessels. *Annals of Botany* 19:111. 1905.

<sup>12</sup> NORDHAUSEN, M., Ueber die Bedeutung der papillösen Epidermis als Organ für die Lichtperception des Laubblattes. *Ber. Deutsch. Bot. Gesells.* 25:398-410. 1907.

by HABERLANDT, he reports uniformly positive results, both with and without the darkening of the petiole; whence he concludes that "the lens-function does not stand in direct causal connection with the perception of the direction of light by the leaf-blade."—C. R. B.

**Branching in palms.**—In 1892 MORRIS<sup>13</sup> brought together what had been recorded concerning the branching of palms, which was regarded as an abnormal phenomenon. RIDLEY,<sup>14</sup> who has had eighteen years of experience in the oriental tropics, has now much extended our knowledge of this phenomenon. He believes that the greater number of palms are branched at least at base, and that the production of a single axis from a seed may be regarded as the "abnormal" condition. Lateral buds are produced at or near the base, and these become erect stems, in some cases the whole plant eventually becoming a bush; or these lateral buds may develop as subterranean branches that send up a succession of erect stems (branches). Heretofore the branching of palms has been thought of only in connection with the crown, but RIDLEY's observations indicate that the group is perhaps characterized by a tendency to basal branching.—J. M. C.

**Spirogyra.**—Dr. FRITSCH and Miss RICH<sup>15</sup> have begun a series of studies of the British freshwater algae, the first one dealing with Spirogyra. The principal topics are: "The occurrence of Spirogyra in nature," "The reproduction of Spirogyra in nature," and "Points of systematic interest." The species examined were either purely vernal or exhibited both a vernal and an autumnal phase. The autumnal appearance of certain species is thought to be due to certain external conditions that cause a small number of zygospores to germinate. "Reproduction takes place ordinarily in the vernal phase, and is most probably the result of certain periodically recurring combinations of factors, which vary for different species;" in support of which view the authors present a considerable number of data.—J. M. C.

**Limiting factors and growth.**—A. M. SMITH, late a pupil of BLACKMAN at Cambridge, has carried out a thorough study of the rate of growth in a number of plants at different stations in Ceylon, applying to the discussion of his results<sup>16</sup> BLACKMAN'S fruitful theory of limiting factors. In *Agave* and *Furcraea* tem-

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<sup>13</sup> MORRIS, DANIEL, On the phenomena concerned in the production of forked and branched palms. *Jour. Linn. Soc. London Bot.* 29:281. 1892.

<sup>14</sup> RIDLEY, H. N., Branching in palms. *Annals of Botany* 21:415-422. *pls.* 34-39. 1907.

<sup>15</sup> FRITSCH, F. E., and RICH, FLORENCE, Studies on the occurrence and reproduction of British freshwater algae in nature. I. Preliminary observations on Spirogyra. *Annals of Botany* 21:423-436. 1907.

<sup>16</sup> SMITH, A. M., On the application of the theory of limiting factors to measurements and observation of growth in Ceylon. *Annals Roy. Bot. Gardens Peradeniya* 3:303-375. *pls.* 22-25. 1907.